

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1           1.       (Previously Presented) A computer system, comprising:  
2           a plurality of computer processor cores in which at least two of the computer processor  
3           cores are heterogeneous, and wherein the plurality of computer processor cores execute the same  
4           instruction set; and  
5           a performance measurement and transfer mechanism configured to move a plurality of  
6           executing computer processing jobs amongst the plurality of computer processor cores by  
7           matching requirements of the plurality of executing computer processing jobs to processing  
8           capabilities of the computer processor cores.
- 1           2.       (Currently Amended) The computer system of claim 1, further comprising:  
2           at least one of an operating system hosted on the plurality of computer processor cores,  
3           firmware, and ~~special-purpose~~ hardware that includes the performance measurement and transfer  
4           mechanism, and the at least one of the operating system, firmware, and ~~special-purpose~~ hardware  
5           is configured to provide for a periodic test to determine relative performance of different jobs on  
6           different ones of the computer processor cores.
- 1           3-6. (Canceled)

1           7.     (Previously Presented) A method for operating multiple processor cores,  
2 comprising:

3           obtaining a throughput metric that identifies throughput achieved by a plurality of  
4 computer processor cores as a function of workloads running on said computer processor cores,  
5 wherein the plurality of computer processor cores are on a single semiconductor die, in which at  
6 least two computer processor cores differ in processing capability, and wherein the computer  
7 processor cores execute the same instruction set; and

8           transferring individual ones of a plurality of computer processing jobs amongst targeted  
9 ones of said plurality of computer processor cores based on the throughput metric.

1           8.     (Previously Presented) The method of claim 7, further comprising:

2           providing for a periodic test to determine relative performance of different jobs on  
3 different ones of the computer processor cores.

1           9- 14 (Canceled)

1           15.    (Original) The method of claim 7, further comprising:

2           associating workloads for execution on specific processor cores based on annotations  
3 associated with the computer processing jobs.

1           16.    (Canceled)

1           17.     (Currently Amended) The computer system of claim 1, further comprising at least  
2     one of an operating system hosted on the plurality of computer processor cores, firmware, and  
3     ~~special-purpose~~ hardware that includes the performance measurement and transfer mechanism.

1           18.     (Previously Presented) The computer system of claim 1, wherein the performance  
2     measurement and transfer mechanism is configured to maximize total system throughput.

1           19.     (Previously Presented) The computer system of claim 1, wherein the performance  
2     measurement and transfer mechanism is configured to transfer the executing computer  
3     processing jobs to a new assignment amongst the plurality of computer processor cores, collect  
4     performance statistics about execution at the new assignment, and then determine whether to  
5     reassign the executing computer processing jobs to different computer processor cores based on  
6     the performance statistics collected.

1           20.     (Previously Presented) A computer system, comprising:  
2             a plurality of computer processor cores in which at least two differ in processing  
3     performance, and wherein the plurality of computer processor cores execute the same instruction  
4     set; and  
5             a performance measurement and transfer mechanism configured to move a plurality of  
6     executing computer processing jobs amongst the plurality of computer processor cores based on  
7     a measured throughput metric,  
8             wherein the performance measurement and transfer mechanism is configured to swap  
9     execution of the executing computer processing jobs between the computer processor cores for a  
10    period of time, monitor resulting performance, and then build a data structure with relative  
11    performances of jobs on different types of computer processor cores.

1           21.     (Previously Presented) The computer system of claim 20, wherein the jobs are  
2     reassigned based on the relative performances, by assigning jobs that benefited most from large  
3     complex processor cores to said large complex processor cores.

1           22.   (Previously Presented) The computer system of claim 19, wherein the  
2   determination of whether to reassign the jobs to different computer processor cores also is based  
3   on at least one of a user-defined metric or a workload-defined metric.

1           23.   (Previously Presented) The method of claim 7, wherein the throughput metric  
2   comprises a number of instructions per second.

1           24.   (Previously Presented) The computer system of claim 1, wherein movement of the  
2   executing computer processing jobs is constrained to occur only at operating system time slice  
3   intervals.

1           25.   (Previously Presented) A method for operating multiple processor cores,  
2   comprising:

3           assigning a plurality of computer processing jobs amongst a plurality of computer  
4   processor cores, wherein at least two of the computer processor cores differ in size or  
5   complexity but execute the same instruction set, and

6           wherein assigning the plurality of computer processing jobs amongst the plurality of  
7   computer processor cores comprises matching requirements of the computer processing jobs to  
8   processing capabilities of the computer processor cores based on the sizes or complexities of the  
9   computer processor cores.

1           26.   (Previously Presented) The method of claim 25, further comprising periodically  
2   testing to determine relative performance of different jobs on different ones of the computer  
3   processor cores.

1           27.-28. (Cancelled)

1           29. (Previously Presented) A method for operating multiple processor cores,  
2 comprising:

3           obtaining a throughput metric that identifies throughput achieved by computer processor  
4 cores on a single semiconductor die as a function of workloads running on said computer  
5 processor cores; and

6           assigning a plurality of computer processing jobs amongst a plurality of computer  
7 processor cores based on the throughput metric, wherein at least two of the computer processor  
8 cores differ in size or complexity but execute the same instruction set;

9           transferring the computer processing jobs to a new assignment amongst the plurality of  
10 computer processor cores;

11           collecting statistics about execution performance of the computer processing jobs at the  
12 new assignment;

13           determining whether to reassign the computer processing jobs to different computer  
14 processor cores based on the statistics collected; and

15           building a data structure with relative performances of the computer processing jobs on  
16 different types of computer processor cores based on the statistics collected.

1           30. (Previously Presented) The method of claim 29, wherein the determination of  
2 whether to reassign the computer processing jobs to different computer processor cores also is  
3 based on at least one of a user-defined metric or a workload-defined metric.

4           31.   (Previously Presented) The method of claim 29, wherein the throughput metric  
5   comprises a number of instructions performed per second.

1           32.   (Previously Presented) The computer system of claim 1, wherein the processing  
2   capabilities of the computer processor cores are defined by one or more of chip area, available  
3   resource, and relative speed of the computer processor cores.

1           33.   (Previously Presented) The computer system of claim 1, wherein the performance  
2   measurement and transfer mechanism is configured to move the plurality of executing computer  
3   processing jobs amongst the plurality of computer processor cores further based on annotations  
4   associated with the computer processing jobs.

1           34.   (Previously Presented) The computer system of claim 1, wherein the performance  
2   measurement and transfer mechanism is configured to further re-assign the plurality of executing  
3   computer processing jobs amongst the plurality of computer processor cores by repeatedly  
4   performing a test to match the requirements of the plurality of executing computer processing  
5   jobs to the processing capabilities of the computer processor cores.

1           35.   (Previously Presented) The method of claim 25, wherein assigning the plurality of  
2   computer processing jobs amongst the plurality of computer processor cores is further based on  
3   annotations associated with the computer processing jobs.

1           36.   (Previously Presented) The method of claim 25, further comprising:  
2       repeatedly performing a test to match requirements of the computer processing jobs to the  
3   processing capabilities of the computer processor cores; and  
4       re-assigning the plurality of computer processing jobs amongst the plurality of computer  
5   processor cores based on the repeated tests.

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- 1           37.   (New) The method of claim 29, wherein the throughput metric indicates total
- 2   system throughput, and wherein the assigning maximizes the total system throughput, as
- 3   indicated by the throughput metric.